of character which contact force has been assumed to have; but one that has all the variations which chemical force is *known* to exhibit.

993. The changes occurring where any one of four or five metals, differing from each other as far as silver and tin, can be made positive or negative to the others (985, 986), appears to me to shut out the probability that the contact of these metals with each other can produce the smallest portion of the effect in these voltaic arrangements; and then, if not there, neither can they be effective in any other arrangements; so that what has been deduced in that respect from former experiments (817, 821) is confirmed by the present.

994. Or if the scene be shifted, and it be said that it is the *contact* of the acids or solutions which, by dilution at one side, produce these varied changes (862, 970, 979, 1002, 1048), then how *utterly unlike* such contact must be to that of the numerous class of conducting solid bodies (797, 855)! and where, to give the assumption any show of support, is the case of such contact (apart from chemical action) producing such currents?

995. That it cannot be an alteration of contact force by mere dilution at one side (994) is also shown by making such a change, but using metals that are chemically inactive in the electrolyte employed. Thus when nitric or sulphuric acids were diluted at one side, and then the strong and the weak parts connected by platinum or gold (964), there was no sensible current, or only one so small as to be unimportant.

996. A still stronger proof is afforded by the following result. I arranged the tube, fig. 72 (960), with strong solution of yellow sulphuret of potassium (800) from A to *m*, and a solution consisting of one volume of the strong solution, with six of water from *m* to B. The extremities were then connected by platinum and iron in various ways; and when the first effect of immersion was guarded against, including the first brief negative state of the iron (1037), the effects were as follows.

Platinum being in A and in B, that in A, or the strong solution, was very slightly positive, causing a permanent deflection of 2°.

Iron being in A and in B, the same result was obtained. Iron being in A and platinum in B, the iron was positive about 2° to the platinum. Platinum being in A

and iron in B, the
platinum was now positive to the iron
by about 2°. So that
not only the contact of the iron and
platinum passes for nothing,
but the contact of strong and weak
solution of this electrolyte
with either iron or platinum is
ineffectual in producing a